Maths Progression Document – East Stour Primary

FRACTIONS, DECIMALS AND PERCENTAGES

VOCABULARY FRACTIONS							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		fraction equal part equal grouping equal sharing parts of a whole half one of two equal parts quarter one of four equal parts	ALL PREVIOUS fraction equivalent fraction mixed number numerator, denominator, two halves, two quarters, three quarters one third, two thirds one of three equal parts	ALL PREVIOUS sixths, sevenths, eighths, tenths …	ALL PREVIOUS hundredths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion	ALL PREVIOUS proper/improper fraction equivalent, reduced to, cancel thousandths in every, for every percentage, per cent, %	
Strand	NURSERY/EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting in fractional steps			Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line	count up and down in tenths	count up and down in hundredths		

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Recognising Fractions	61-66 Months They solve problems, including doubling, halving and sharing. 67+ Months Solves practical problems that involve combining groups of 2,5 or 10 or sharing into equal groups.	Recognise, find and name a half as one of two equal parts of an object, shape or quantity Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	Recognise, find, name and write fractions 1 / 3 , 1 / 4 , 2 / 4 and 3 / 4 of a length, shape, set of objects or quantity	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	
COMPARING FRACTIONS							

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				Compare and order unit fractions, and fractions with the same denominators		Compare and order fractions whose denominators are all multiples of the same number	Compare and order fractions, including fractions >1
COMPARING DECIMALS							
					Compare numbers with the same number of decimal places up to two decimal places	Read, write, order and compare numbers with up to three decimal places	Identify the value of each digit in numbers given to three decimal places
ROUNDING INCLUDING DECIMALS							
					round decimals with one decimal place to the nearest whole number	number round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
EQUIVALENCE INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES							
			Write simple fractions e.g. 1 / 2 of 6 = 3 and recognise the equivalence of 2 / 4 and 1 / 2 .	Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Use common factors to simplify fractions; use common multiples to express

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					Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to 1 / 4 ; 1 / 2 ; 3 / 4	Read and write decimal numbers as fractions (e.g. 0.71 = 71 / 100) Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal fraction	fractions in the same denomination Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 / 8) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
ADDING AND SUBTRACTING FRACTIONS							
				Add and subtract fractions with the same denominator within one whole (e.g. 5 / 7 + 1 / 7 = 6 / 7)	Add and subtract fractions with the same denominator	Add and subtract fractions with the same denominator and multiples of the same number Recognise mixed numbers fractions and improper fractions and convert from one form to the other and write mathematical	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

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						statements > 1 as a mixed number (e.g. 2 / 5 + 4 / 5 = 6 / 5 = 1 1 / 5)	
MULTIPLYING AND DIVIDING FRACTIONS AND DECIMALS							
					Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1 / 4 × 1 / 2 = 1 / 8) Multiply one-digit numbers with up to two decimal places by whole numbers Divide proper fractions by whole numbers

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							(e.g. 1 / 3 ÷ 2 = 1 / 6) Multiply one-digit numbers with up to two decimal places by whole numbers Multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places Associate a fraction with division and

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							calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 /8) Use written division methods in cases where the answer has up to two decimal places

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PROBLEM SOLVING WITH FRACTIONS< DECIMALS AND PERCENTAGES							
				Solve problems that involve all of the above	Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number Solve simple measure and money problems involving fractions and decimals to two decimal places.	Solve problems involving numbers up to three decimal places Solve problems which require knowing percentage and decimal equivalents of 1 / 2 , 1 / 4 , 1 / 5 , 2 / 5 , 4 / 5 and those with a denominator of a multiple of 10 or 25.	

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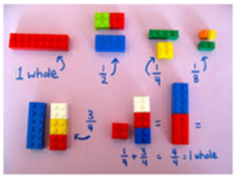
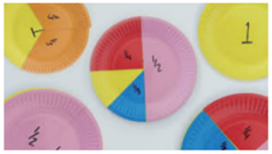
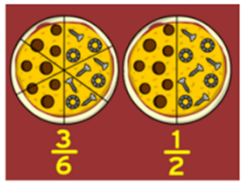
Manipulatives & Resources	        
The resources above are ony suggestions and not an excusive list for each Year group. A range of resources should be avaialble to ALL children within each lesson and modelled to the children as part of the lesson. These should be easily accessed by ALL children to underpin and extend their learning of key concepts. Careful planning should be used to link an appropriate resource to childrens understanding and these chices should be underpinned by discussions with previous teachers about resources used with current learners. Clear links between resources should be made explicit to the children allowing them to build a solid schema.	

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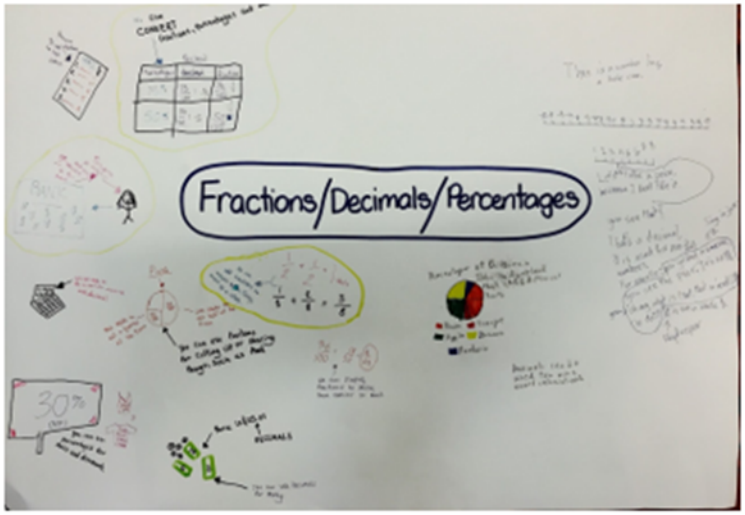
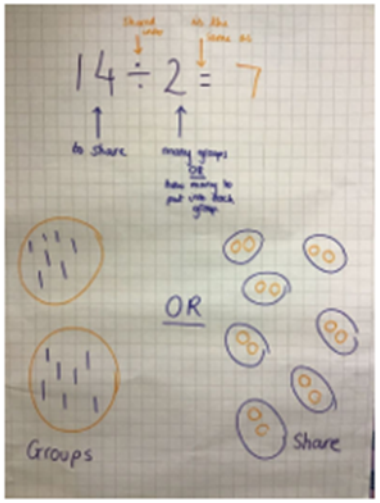
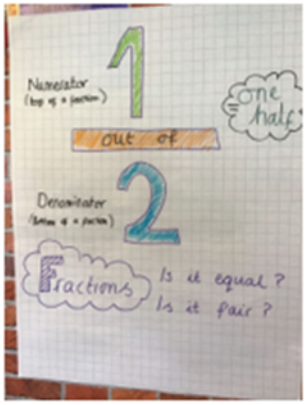
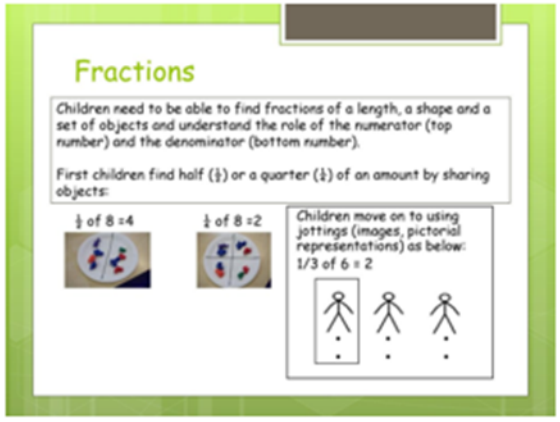
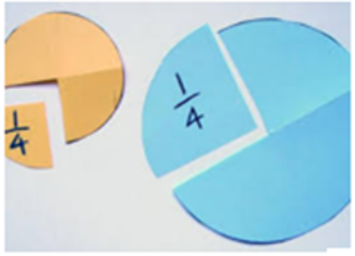
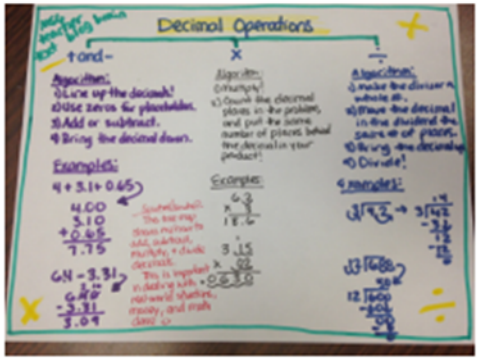
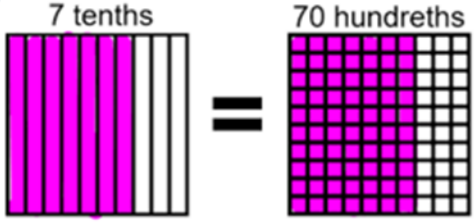
Pictorial Representaions to underpin Place Value	       

All pictorial representtions should be carefully underpinned by an appropriate manipulative to ensure children make a seemless transtion between the concrete and pictorial phrase of understanding.

Eg: Burgers chips and Peas is underpinned through using Dienes or Base 10. The pictorial represenation is similar to the jotting beig made by the children making clear links for the children.

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Useful Websites and interactive Resources	For Children • Third Space Learning Maths Hub (resources from maths tuition experts) • BBC Bitesize – KS2 Maths (everything) • Primary Games Arena (games) • Hit the Button (times tables and number bonds) • Math is Fun (worksheets) • Primary Resources • NRich (problem solving and challenge questions) • TT Rockstars (competitive times tables) • Maths Zone (portal to lots of maths games and quizzes) • ICT Games	For Teachers www.tes.co.uk www.nrich.org www.NCETM.org